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EXAMINER

ROSE, KERRI M

ART UNIT

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 12/18/2008 have been fully considered but they are not persuasive.
2. In response to applicant's argument that Leung does not teach "a processor for encapsulating" and "an encapsulating cache for storing binding information", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Additionally, Okada modified by Shimizu discloses an encapsulating cache for storing binding information and a processor for encapsulating a packet. The modification of Leung extends the teaching so that each interface includes an encapsulating cache and processor for encapsulating.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4, 5, 7-13, 15-19, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada (US 2002/0012327) in view of Shimizu et al. (US 2002/0009066) further in view of Leung (US 6,621,810).

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5. In regards to claim 1, Okada discloses a mobile node supporting router (paragraph 155 discloses a router in communication with mobile nodes.) comprising:

- a. A home link interface connected to a home link of a mobile node (The router is between the mobile node and the host and therefore has a home and foreign interface);
and
- b. A plurality of foreign link interfaces each connected to a foreign link of the mobile node (The router is between the mobile node and the host and therefore has a home and foreign interface. Figure 4 of Okada shows a router with three interfaces. Only one can be the home interface, meaning the other two must be foreign interfaces.);
- c. The foreign link interface having a cache for storing binding information of the mobile node (Paragraphs 150 and 155 and figure 11 further disclose that the binding information includes an association between the home address and output interface.) and a processor for (Paragraph 17 discloses a controller [processor] for obtaining and using address information.),
- d. Wherein the binding information comprises information associating a home address of the mobile node with an output address at a time of moving (Paragraphs 150 and 155 and figure 11 further disclose that the binding information includes an association between the home address and output interface. When a mobile node moves it must update the output address to reflect its new location in order to continue communications.), and
- e. Each processor transfers the packet based on the binding information stored in each cache from an output interface associated with the output address by the binding

information (The packet must be provided to the output interface in order to be forwarded to the final destination.).

Okada does not disclose if the cache is an encapsulating cache and if the binding information includes a care-of address as the output address. Okada is silent as to whether *each* foreign interface contains an encapsulating cache and processor. Okada is also silent to encapsulating a packet and outputting the encapsulated packet whereby the encapsulated packet is transferred through the foreign link interfaces, not through the home link interface.

Shimizu discloses an encapsulating cache storing binding information in a foreign interface associating the home address and the care-of address in figure 4. Shimizu discloses in figure 9 encapsulating a packet and bypassing a home agent, i.e. transmitting the encapsulated packet on a foreign link.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the care-of address, as taught by Shimizu, in the binding information taught by Okada because doing so allows for route optimization as taught by Shimizu in paragraph 19.

Leung discloses multiple interfaces in column 13 lines 40-50. Leung further discloses that each interface may have its own processor and memory in column 13 lines 50-54.

It would have been obvious to one of ordinary skill in the art at the time of the invention for each interface to include its own processor and memory, as taught by Leung, in the mobile router of Okada because doing so allows the master processor to more efficiently handle other tasks, such as network diagnostics and security, by offloading some of the intensive tasks, as taught by Leung in column 13 lines 54-60.

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6. In regards to claim 4, Okada discloses a lifetime for the binding information in the second half of paragraph 150.

7. In regards to claim 5, the encapsulated packet must travel through the router to reach the interface. Such a route may inherently be called a packet transfer route.

8. In regards to claim 7, Okada discloses an example of the binding information as stored in the cache in figure 11.

9. In regards to claim 8, Okada discloses using Mobile IP. Mobile IP defines sending a binding reply packet in response to the binding update packet sent in paragraph 145. The binding reply must travel through a route that may be called a packet transfer route.

10. In regards to claim 9, a binding reply is sent to the originating node. In order for the reply to reach the node it must be sent through the correct interface, that interface being the one supplied in the encapsulating cache.

11. In regards to claim 10, Okada discloses the mobile node router of claim 1 wherein when the encapsulating cache does not store the binding information of the node upon receiving a packet associated with the node, the processor acquires the binding information from a home agent. Mobile IP specifies that the home agent *always* maintains a current binding. Therefore the current binding is inherently available from the home agent if it was not stored in the encapsulating cache.

12. Claims 11-13 and 15-19 are inherent within Mobile IP.

13. In regards to claim 25, Okada discloses the mobile node router as claimed in claim 1 wherein the home agent is at least either on the home link or included in the home link interface. By definition the home agent must be associated with the home link.

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14. In regards to claim 22, Okada discloses in figure 10 a router, which is situated between the home and foreign agents. The router receives the binding messages and maintains the cache of binding information instead of the home agent.

15. In regards to claim 23, Okada discloses using Mobile IP for the binding messages in paragraph 145.

16. In regards to claim 24, Okada discloses the mobile node supporting router as claimed in claim 22 wherein when receiving information necessary for updating binding information which a binding cache of the home agent stores by the mobile IP message, the processor transmits the necessary information to the home agent. Mobile IP specifies that the home agent always maintains a current binding. Therefore any binding message must inherently be sent to the home agent.

Allowable Subject Matter

17. Claims 14, 20, and 21 are allowed.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KERRI M. ROSE whose telephone number is (571) 272-0542.

The examiner can normally be reached on Monday through Thursday, 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung MOE can be reached on (571) 272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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